Claims

1. A burner (1),
wherein at least one fuel (7) is supplied which flows in a flow direction (88), with the fuel (7) having a concentration distribution (58) in a plane perpendicular to the flow direction (88),

characterized in that

the concentration distribution (52) is not constant in order to avoid combustion instabilities during operation of the burner (1).

2. A burner (1),
wherein air and/or oxygen (4) is supplied which flows in a flow direction (88), with the air and/or oxygen (4) having a distribution of an outflow angle in a plane perpendicular to the flow direction (88),

characterized in that

the distribution of the outflow angle is not constant in order to avoid combustion instabilities during operation of the burner (1).

3. The burner according to claim 1 or 2,
characterized in that

the burner (1) has a burner longitudinal axis (46),

the burner (1) has a radial direction (55) disposed perpendicularly to the burner longitudinal axis (46), and the concentration distribution (52) of the fuel (7) varies in the radial direction (55).

4. The burner according to claim 3, characterized in that

the burner (1) has a burner longitudinal axis (46) which represents the interior area of the burner (1), and the concentration distribution (52) of the fuel (7) decreases from the interior to the exterior.

5. The burner according to claim 1, characterized in that

the fuel (7) can be supplied in a channel (13) and
air (4) and/or oxygen can be supplied into the channel (13).

6. The burner according to claim 2, characterized in that

the air and/or oxygen (4) can be supplied in a channel (13), and
fuel (7) can be supplied into the channel (13).

7. The burner according to claim 1 or 2, characterized in that

the burner (1) has a burner longitudinal axis (46),

the fuel (7) or the air or the oxygen (4) can be supplied to a channel (13), and
the channel (13) is embodied annularly around the burner longitudinal axis (46).

8. The burner according to claim 1 or 2, characterized in that

the burner (1) has a burner longitudinal axis (46),
the burner (1) has a radial direction (55) disposed perpendicularly to the burner longitudinal axis (46),
the burner (1) has a channel (13) in which a medium flows, and
the flowing medium has an outflow angle (α) between its flow direction and a plane perpendicular to the burner longitudinal axis (46), which angle varies in the radial direction (55).

9. The burner according to claim 8, characterized in that

the burner (1) has a burner longitudinal axis (46) which represents the interior area of the burner (1), and
the outflow angle (α) decreases in the radial direction (55) from the interior to the exterior.

10. The burner according to claim 5 or 6, characterized in that

a fuel-gas mixture flows in the channel (13).

11. The burner according to claim 1 or 2, characterized in that

the burner (1) is a gas turbine burner.

12. The burner according to claim 1 or 2,
characterized in that

the burner (1) has a diffusion or pilot burner (43).

13. The burner according to claim 1 or 2,
characterized in that

the burner (1) is a premix burner.

14. The burner according to claim 1 or 2,
characterized in that

the burner (1) has a channel (13), and
at least one swirl blade (16) is disposed in the channel (13).

15. The burner according to claim 14,
characterized in that

the fuel (7) can be supplied into the channel (13) via at least one fuel nozzle (31) in the swirl blade (16).

16. The burner according to claim 15,
characterized in that

the swirl blade (16) has fuel nozzles (31) whose diameters vary, with the result that the concentration distribution (52) of the fuel (7) is not constant.

17. The burner according to claim 16, characterized in that

the burner (1) has a burner longitudinal axis (46) which represents the interior area of the burner (1),
the burner (1) has a radial direction (55) disposed perpendicularly to the burner longitudinal axis (46), and
the diameter of the fuel nozzles (31) of the installed swirl blade (16) decreases in the radial direction (55) from the interior to the exterior.

18. The burner (1) according to claim 1 or 2, characterized in that

the burner (1) has at least one swirl blade (16),
with the swirl blade (16) having a bladed disk (61) which is wound around a winding axis (76) such that the gas flowing past the swirl blade (16) in the flow direction (88) along an edge of the bladed disk (61) which forms an intersecting angle not equal to zero with the flow direction (88) has different outflow angles (α).

19. The burner (1) according to claim 18, characterized in that

the burner (1) has a burner longitudinal axis (46) which represents the interior area of the burner (1),
the burner (1) has a radial direction (55) disposed perpendicularly to the burner longitudinal axis (46),
the outflow angle (α) of a gas flowing past a swirl blade (16) in the radial direction (55) has different outflow angles (α) at the swirl blade (16),
with the outflow angle (α) decreasing in the radial direction (55) from the interior to the exterior.